

CLAIMS:

- 1 1. A system for accepting user input, comprising:
2 a plurality of switches;
3 a pressure member coupled to the plurality of switches, the pressure member
4 having multiple sections, wherein each section of the multiple sections is associated with a
5 switch of the plurality of switches; and
6 wherein the pressure member is positioned in relation to the plurality of
7 switches such that when a force is applied by a user to one of the multiple sections, the
8 pressure member transmits a resulting force to a switch associated with the one of the
9 multiple sections thereby causing actuation of the switch associated with the one of the
10 multiple sections.
- 1 2. The system of claim 1 further comprising a display, wherein the display displays at
2 least one input option and wherein at least one of the multiple sections of the pressure
3 member is spatially associated with the at least one input option displayed.
- 1 3. The system of claim 2 wherein at least a portion the pressure member is optically
2 transparent, the pressure member is further positioned in front of the display so that the
3 display is visible through the pressure member, the plurality of switches is further located
4 adjacent to the display and the at least one input option displayed is viewed through the
5 pressure member.
- 1 4. The system of claim 3 wherein the system operates in a motor vehicle.
- 1 5. The system of claim 1 wherein the system operates in a motor vehicle.
- 1 6. The system of claim 1 wherein the system operates as a component of a media player.
- 1 7. The system of claim 1 wherein the at least one of the multiple sections has a tactile
2 element, wherein the tactile element reduces the requirement for a visual location, by the
3 user, of the at least one of the multiple sections of the pressure member.
- 1 8. The system of claim 1 wherein the pressure member includes four sections and
2 wherein each section is associated with one of the four switches.

1 9. The system of claim 1 wherein the pressure member transmits a resulting force to a
2 single switch associated with the one of the multiple sections.

1 10. The system of claim 1 wherein the pressure member transmits a resulting force to at
2 least two switches associated with the one of the multiple sections.

1 11. The system of claim 1 wherein the switch actuation initiates a system operation.

1 12. The system of claim 1 wherein the mechanical characteristics of the pressure member
2 are spatially varied, in order to focus forces exerted upon a selected section of the pressure
3 member to effect a desired switch actuation.

1 13. The system of claim 1 comprising:

2 a first switch of the plurality of switches;

3 a second switch of the plurality of switches; and

4 a control circuit;

5 wherein, as a result of the exertion of a force by the user to the pressure
6 member, the pressure member transmits a first resulting force to a first switch associated with
7 one of the multiple sections of the pressure member and a second resulting force to a second
8 switch associated with another of the multiple sections of the pressure member thereby
9 causing an actuation of the first switch of the plurality of switches and an actuation of the
10 second switch of the plurality of switches;

11 whereupon the control circuit identifies a multiple switch activation as an
12 inferred system state.

1 14. The system of claim 1, further comprising a fulcrum that localizes deflection of the
2 pressure member resulting from forces applied by a user, in order to affect which switches
3 are actuated by the applied force.

1 15. The system of claim 1 wherein the system, in response to the exertion of a force on
2 the pressure member by the user, provides confirmation of a user input to the user.

1 16. The system of claim 1, further comprising an indicator light, wherein the indicator
2 light upon the exertion of a force to the pressure member by a user, is configured to
3 illuminate in order to provide a visual confirmation of the switch actuation to the user.

1 17. The system of claim 1 wherein the system is configured to provide an audible
2 confirmation of the switch actuation to the user.

1 18. The system of claim 17 wherein the audible confirmation of the switch actuation is a
2 synthetic voice.

1 19. A system for accepting user input, comprising:
2 a first control configured to select a media source in response to an actuation
3 of the first control by a user;
4 a second control, wherein the second control has two degrees of freedom in
5 actuation configured to choose a mode from a set of modes for the selected media source in
6 response to an actuation of the first degree of freedom of the second control by the user,
7 wherein actuation of the second degree of freedom by the user of the second control is
8 configured to identify a media content item selection; and
9 a display for displaying one of the media source, mode and media content item.

1 20. The system for accepting user input of claim 19, further comprising a pressure
2 member coupled to a plurality of switches, the pressure member having multiple sections,
3 wherein each section of the multiple sections is associated with a switch of the plurality of
4 switches and wherein the pressure member is positioned in relation to the plurality of
5 switches such that when a force is applied by a user to one of the multiple sections, the
6 pressure member transmits a resulting force to a switch associated with the one of the
7 multiple sections thereby causing actuation of the switch associated with the one of the
8 multiple sections.

1 21. The system of claim 19 wherein a control comprises a shaft, wherein the shaft is
2 mounted within a void of the pressure member and secured by a fastener.

1 22. The system of claim 19 wherein the system delays, for a predetermined time, before
2 executing one of a user media source selection, mode selection and media content item
3 selection.

1 23. The system of claim 19 wherein, upon the occurrence of one of a user media source
2 selection, mode selection, and media content item selection, the system provides a sub-menu
3 of options to the user.

1 24. The system of claim 19 wherein a display is configured to provide a visual
2 confirmation of the media source selected.

1 25. The system of claim 24 wherein the display displays a color cue based on a media
2 source selected.

1 26. The system of claim 24 wherein the display provides a position indicator depicting to
2 the user, the relative position of a selected media content item within a browsable list of
3 media content items, wherein the position indicator is displayed in a radial format.

1 27. The system of claim 19 wherein the display is a touch screen and wherein the touch
2 screen is configured to process a user input.

1 28. The system of claim 19 wherein a control is configured to provide a visual
2 confirmation of a user input.

1 29. The system of claim 28 wherein the visual confirmation is text.

1 30. The system of claim 28 wherein the visual confirmation is a graphic.

1 31. The system of claim 28 wherein the visual confirmation is a color change.

1 32. The system of claim 28 wherein at least a portion of the control is optically
2 transparent, wherein the control is positioned over the display and wherein information
3 displayed by the display is visible through the control.

1 33. The system of claim 32 wherein the visual information is text.

1 34. The system of claim 32 wherein the visual information is a graphic.

1 35. The system of claim 32 wherein the visual information is a color change.

1 36. The system of claim 19 wherein the system is configured to provide an audible
2 confirmation of the media source selected.

1 37. The system of claim 36 wherein the audible confirmation of the media source
2 selected is a synthetic voice.

1 38. The system of claim 19 wherein a second control is positioned in front of the display
2 and wherein the second control accepts actuation of the second degree of freedom by the
3 user, as a user input.

1 39. A system for accepting user input, comprising:

2 at least one switch;

3 a display, wherein the display depicts menu options including:

4 media content information;

5 control options; wherein the control options are displayed on the display near
6 the switch

7 a pressure member disposed over the display wherein at least a portion of the display
8 is visible through the pressure member, the pressure member being configured to accept a
9 force exerted by a user within a section of the pressure member;

10 the pressure member further coupled to the at least one switch such that a
11 resulting force transmitted by the pressure member in response to a user applied force causes
12 a switch actuation; and

13 at least one control, configured to accept one of a push and turn in order to select one
14 of the menu options.

1 40. The system of claim 39 wherein at least a portion of the at least one control is
2 optically transparent, wherein the at least one control is positioned over the display and
3 wherein information displayed by the display is visible through the at least one control.

1 41. The system of claim 39 wherein the display displays a color to provide user feedback.

1 42. The system of claim 40 wherein the at least one control displays a color to provide
2 user feedback.

1 43. The system of claim 40 wherein the at least one control displays an symbolic
2 representation of a selected one of the media content source, mode and media content item.

1 44. The system of claim 19 for accepting user input, wherein said first control has two
2 degrees of freedom in actuation, and wherein actuation of the first degree of freedom is
3 associated with selection of a media source, and the second degree of freedom is associated
4 with control of system volume.

1 45. A system for accepting user input in a media player, comprising:
2 a display for displaying one of the media source, mode and media content
3 item;
4 at least one control, wherein the at least one control has two degrees of
5 freedom in actuation, wherein the at least one control is disposed over the display and
6 at least a portion of the control is optically transparent such that at least a portion of
7 the display is visible through the at least one control.

1 46. A media player for use in a motor vehicle, comprising:
2 a plurality of switches;
3 a display for displaying one of the media source, mode and media content
4 item;
5 a pressure member coupled to at least one of the plurality of switches, the
6 pressure member disposed over the display wherein at least a portion of the display is
7 visible through the pressure member, the pressure member being configured to accept
8 a force exerted by a user within a section of the pressure member; and
9 two controls, wherein each of the two controls is located to one side of the
10 display and wherein the controls have two degrees of freedom in actuation.

1 47. In a system for accepting a user input, a method for accepting the user input,
2 comprising the steps of:

3 displaying a set of options on a display to prompt for a user selection, wherein
 4 at least a portion of the display is visible through a pressure member, the pressure member
 5 being positioned in front of the display;

6 generating a switch actuation in response to a force exerted by the user on a
 7 section of the pressure member wherein the section of the pressure member corresponds to a
 8 desired option, wherein the switch is arranged in an array of switches adjacent to the display;
 9 and

10 based on the switch actuation, changing a system state.

1 48. The method of claim 47, further comprising the step of providing a confirmation in
 2 response to the exertion of the force to the section of the pressure member by the user.

1 49. The method of claim 48 wherein the confirmation is an audible confirmation.

1 50. The method of claim 47, further comprising the step of:
 2 based on the system state, initiating a system operation.

1 51. The method of claim 47 wherein the step of generating a switch actuation comprises
 2 the steps of:

3 detecting a first switch actuation and a second switch actuation caused by the
 4 transmission of a resulting force by the pressure member to the first switch and the second
 5 switch; and
 6 generating an inferred system state.

1 52. The method of claim 51 wherein the inferred system state initiates a browse function.

1 53. The method of claim 47, further comprising the step of:
 2 accepting actuation of the first degree of freedom of a first control to select
 3 one of the following sources: uIndex, AM, FM, satellite radio, compact disk, hard drive,
 4 uMusic, DVD, HVAC/climate, core navigation.

1 54. The method of claim 47, further comprising the step of:
 2 accepting actuation of the first degree of freedom of a second control to select
 3 one of the following modes: AM presets, AM seek, AM tune, FM preset, FM seek, FM tune,

4 FM station, FM song, FM genre, FM artist, satellite radio presets, satellite radio station,
5 satellite radio category, satellite radio station, satellite radio song, satellite radio genre,
6 satellite radio artist, CD Track, CD time, CD Disk, CD Artist, CD Song, CD Genre, hard
7 drive title, hard drive track, hard drive artist, hard drive time, hard drive genre, uMusic track,
8 uMusic time, DVD Chapter, HVAC/climate temperature, HVAC/climate fan, core navigation
9 origin, core navigation destination, core navigation directions.

1 55. The method of claim 54, further comprising the steps of:
2 displaying a list of options pertinent to the selected mode; and
3 selecting a desired option based on actuation of the first degree of freedom of
4 the second control.